

What is claimed is:

1. A projectile, comprising:
 - a body;
 - 5 a payload within the body;
 - a target system within the body for affecting operation of the projectile; and
 - an inductive interface which, as part of the target system, permits transfer of at least one of power and data between the target system and an external setter system, the inductive interface comprising:
 - 10 a magnetic core comprised of a compound of ferrite material and non-ferrite material; and
 - a coil wrapped around the magnetic core.
2. The projectile of claim 1, wherein the magnetic core has a ferrite material content in the range of about 50% to about 90% by weight.
- 15 3. The projectile of claim 2, wherein the magnetic core has a ferrite material content in the range of about 70% to about 80% by weight.
- 20 4. The projectile of claim 1, wherein the magnetic core comprises a plastic material impregnated with ferrite material.
5. The projectile of claim 4, wherein the plastic material is impregnated with manganese-zinc ferrite.
- 25 6. The projectile of claim 4, wherein the plastic material is impregnated with nickel-zinc ferrite.
- 30 7. The projectile of claim 4, wherein the plastic material comprises nylon.
8. The projectile of claim 1, wherein the magnetic core is formed with an extruded material.

9. The projectile of claim 1, wherein the body comprises a conical nose portion, and the magnetic core has a hollow conical shape configured to fit within and follow a contour of the nose portion.

5 10. The projectile of claim 9, wherein the nose portion includes a central cylindrical portion along a central axis of the nose which fits within a hollow central portion of the magnetic core such that inner and outer surfaces of the magnetic core are maintained between walls of the nose portion.

10 11. The projectile of claim 10, wherein the central cylindrical portion includes a protrusion for engaging in a snap fit to secure the nose portion and magnetic core to a remainder of the body.

12. A projectile, comprising:
15 a body;
a payload within the body;
a target system within the body for affecting operation of the projectile; and
an inductive interface which, as part of the target system, permits transfer of power and data between the target system and an external setter system.

20 wherein the inductive interface comprises a same coil which serves to transfer power and data.

13. The projectile of claim 12, wherein a voltage waveform induced across the same coil comprises an idle waveform portion comprising energy for 25 powering the target system, and a data waveform portion representing data sent to the target system.

14. The projectile of claim 13, wherein the idle waveform and the data waveform have substantially the same amplitude.

30 15. The projectile of claim 14, wherein the data waveform is also operative to provide energy for powering the target system.

16. The projectile of claim 12, wherein a voltage waveform induced across the same coil comprises a power waveform portion comprising energy for powering the target system, and a data waveform portion representing data sent to the target system, an amplitude of the data waveform portion being substantially smaller than an amplitude of the power waveform portion.

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17. The projectile of claim 16, wherein the voltage waveform includes a field collapse portion between the power waveform portion and the data waveform portion.

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18. The projectile of claim 12, wherein the inductive interface further comprises:

a magnetic core comprised of a compound of ferrite material and non-ferrite material; and

15 the same coil is wrapped around the magnetic core.

19. The projectile of claim 18, wherein the magnetic core comprises a plastic material impregnated with ferrite material.

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20. The projectile of claim 19, wherein the plastic material is impregnated with at least one of manganese-zinc ferrite and nickel-zinc ferrite.

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